

**Preliminary Resource Estimate for the  
El Cajon Borate Deposit  
Magdalena Basin Project, Sonora, Mexico  
(Pursuant to National Instrument 43-101 of  
the Canadian Securities Administrators)**

**Magdalena de Kino Area  
(Map Sheet H1205)  
Sonora, Mexico  
centered at: 30°30'N, 110°50'W**

**For**



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## 1.0 Summary

The Cajon Borate Deposit lies within Bacanora Minerals Ltd's Magdalena Basin Project area in the state of Sonora, Northern Mexico. The Magdalena project consists of 2 concession blocks covering a total of 15,508 hectares. The concessions are 100% owned by Bacanora's Mexican subsidiary: Minera Sonora Borax S.A. de C.V., subject to a 3% royalty to a Rio Tinto subsidiary and a 3% gross over-riding royalty to Colin Orr-Ewing. The property is road accessible and located 17 kilometres east of the town of Magdalena de Kino and has excellent access from that centre, either by rail or truck, to local markets for borate or to overseas markets from the port at Guaymas.

Colemanite ( $\text{Ca}_2\text{B}_6\text{O}_{11}\cdot 1.5\text{H}_2\text{O}$ ), which contains up to 50.8% borate ( $\text{B}_2\text{O}_3$ ), is the primary mineral of interest. Colemanite is hosted in a Miocene age sediment-volcaniclastic succession that in-fills extensional sub-basins formed over metamorphic core complexes that underlie much of the Great Basin - a basin and range physiographic province extending from northern Nevada down into Sonora.

Three main borate zones have been located on the Magdalena project area: Cajon; Bellota and Pozo Nuevo. Other targets include the recently discovered Represo colemanite prospect and the Escuadra occurrence. All of these zones were discovered by previous operators who conducted drilling programs at these sites in the 1970's and 1980's. US Borax was the main sponsor of the work. However, none of the discoveries was put into production in part because of the take-over of US Borax by Rio Tinto Zinc. The Represo prospect is a new colemanite discovery that was recently made by Bacanora during a drilling campaign.

Of the main borate zones the Cajon deposit is the most advanced. Drilling by Bacanora (18 holes) and a US Borax subsidiary (11 holes) has identified 3 separate colemanite horizons (units: A, B and C) within the gently south-dipping sediments that underlie the area. The drilling has allowed an initial borate resource to be estimated for Cajon. The estimate includes an inferred resource for unit A of 7.3 million tonnes averaging 9.3%  $\text{B}_2\text{O}_3$  and indicated resource for Units B and C totaling 11.1 million tonnes averaging 9.9%  $\text{B}_2\text{O}_3$  using a cut off of 8%  $\text{B}_2\text{O}_3$ . The average thickness for each bed making up the 3 units ranges from 4.2 to 9.8 metres.

Results of the exploration on the Magdalena project area and on the Cajon Borate deposit are sufficiently encouraging to warrant further exploration as well as development work on the Cajon deposit.

A program of further exploration and development work is recommended to include:

1. Completion of preliminary metallurgical testing on borate mineralization from Cajon deposit.
2. In-fill diamond drilling of the Cajon deposit in order to upgrade and increase the resource estimate
3. Bulk sampling and detailed metallurgical testing of borate mineralization from Cajon deposit.

The estimated cost of the recommended program is \$US1,000,000.

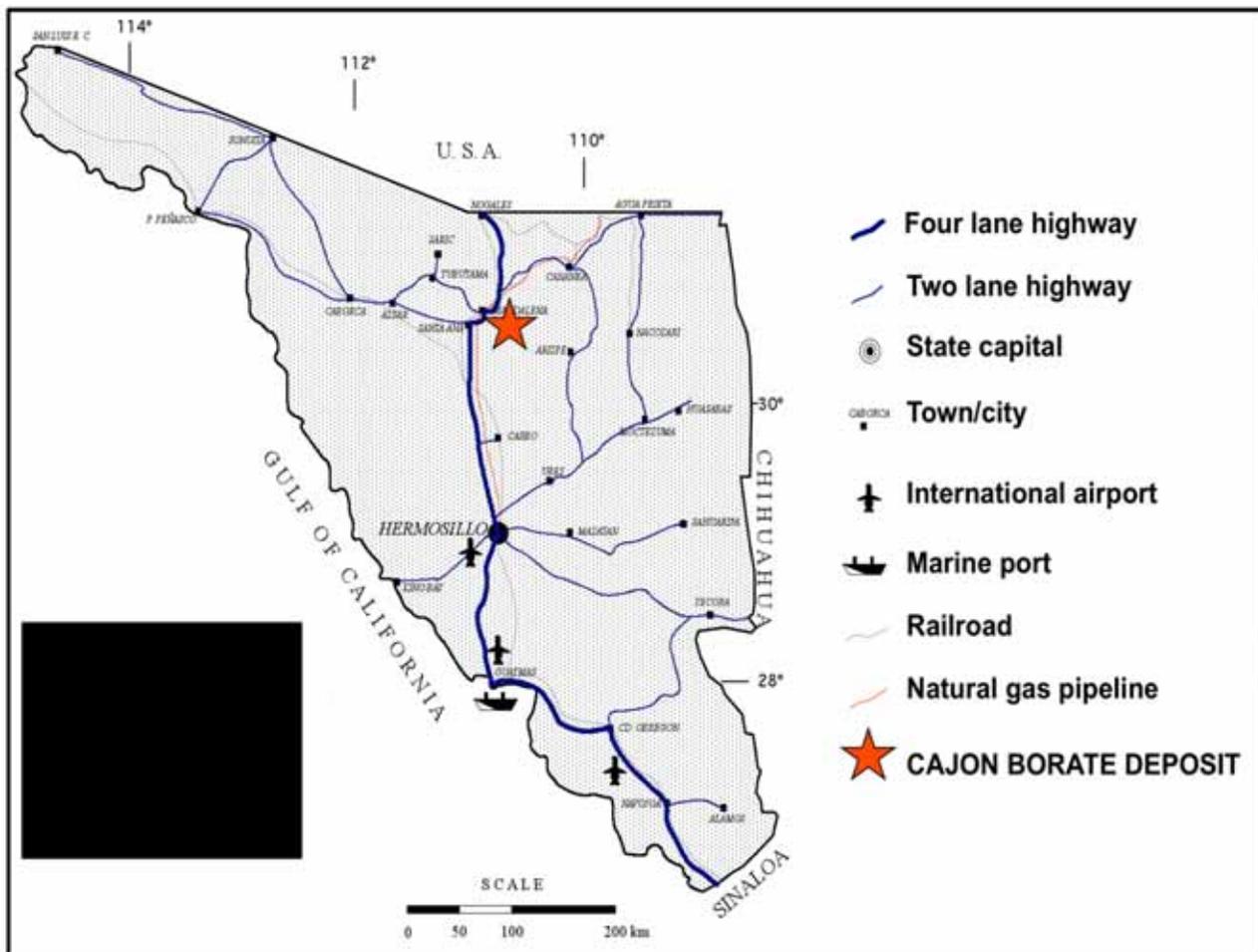


Figure 1. Cajon Borate Deposit Location Map

## **2.0 Introduction**

This report was prepared at the request of Mr. Paul T. Conroy, president of Bacanora Minerals Ltd.

The purpose of the report is to comply with National Instrument 43-101 regulation 4.2 (j)(i) that requires an NI 43-101(F1) report be filed on disclosure of a mineral resource estimate for an issuer's property.

Information contained in this report was sourced from Bacanora Minerals Ltd. survey data, drill logs, assay and analytical reports, Government of Mexico mineral titles data base and topographic maps. General information concerning regional geology and deposits types was sourced from references cited herein and listed at the end of this report.

The lead author with overall responsibility for this report, Carl Verley, P.Geo., inspected the Magdalena Basin Project concessions during the period December 5 to 9, 2010. During this time he examined and verified the location of some of the diamond drill holes on the Cajon deposit, examined the geology of the Cajon deposit in the field, examined the diamond drill core from Bacanora's drilling of the Cajon deposit as well as reviewed all analytical data generated from exploration on the project including quality control and quality assurance protocols at the offices of Bacanora's Mexican subsidiary, Minera Sonora Borax S.A. de C.V., in Hermosillo, Mexico.

Mr. Rodrigo Calles Montijo, M.Sc. from Servicios Geológicos IMEx SC (IMEx) prepared the mineral resource estimate for the Cajon borate deposit based on information and data provided by Bacanora Minerals Ltd.

Much of the historical reports and some of the academic geological articles used in the preparation of this Technical Report were authored by Martin F. Vidal, Lic.Geo., Vice-president of Exploration for Bacanora Minerals Ltd. Mr. Vidal has worked consistently on the area now covered by the Magdalena concessions for various companies that have held licenses over the area during past 17 years. He is the principal author for most of the Minera Sonora Borax and Rio Tinto internal reports. Mr Vidal is responsible for the sections on Geology and Deposit Types.

## **3.0 Reliance On Other Experts**

Reliance on other experts has not been used in the preparation of this report.

#### 4.0 Property Description And Location

The Magdalena Property consists of 7 individual concessions in 2 separate parcels held by Bacanora's Mexican subsidiary: Minera Sonora Borax S.A. de C.V. The property totals 16,503 hectares in area. The concessions are located approximately 180 km north of the city of Hermosillo, in Sonora State, Mexico, and are about 80 km south of the border with Arizona, USA. The Cajon deposit is located inside the San Francisco 2 and San Francisco Fraction 2 concessions with a possible extension to the south into the San Francisco 1 concession and a concession that belongs to Unimin in the northern edge. Table 1 lists the individual concessions.

**Table 1. Concession status, Magdalena Basin Project**

ConcessionName	Title #	Record Date	Expiry Date	Area Ha
San Francisco No. 1	217709	10/13/2002	10/12/2052	2303
San Francisco No. 2	217948	09/18/2002	09/17/2052	583
San Francisco No. 3	217949	09/18/2002	09/17/2052	351
San Francisco No. 5	220721	09/30/2003	09/29/2053	1500
San Francisco Fraction 1	226247	12/02/2005	12/02/2055	2344
San Francisco Fraction 2	226247	12/02/2005	12/02/2055	4980
El Represo	229263	04/11/2007	04/10/2057	4442

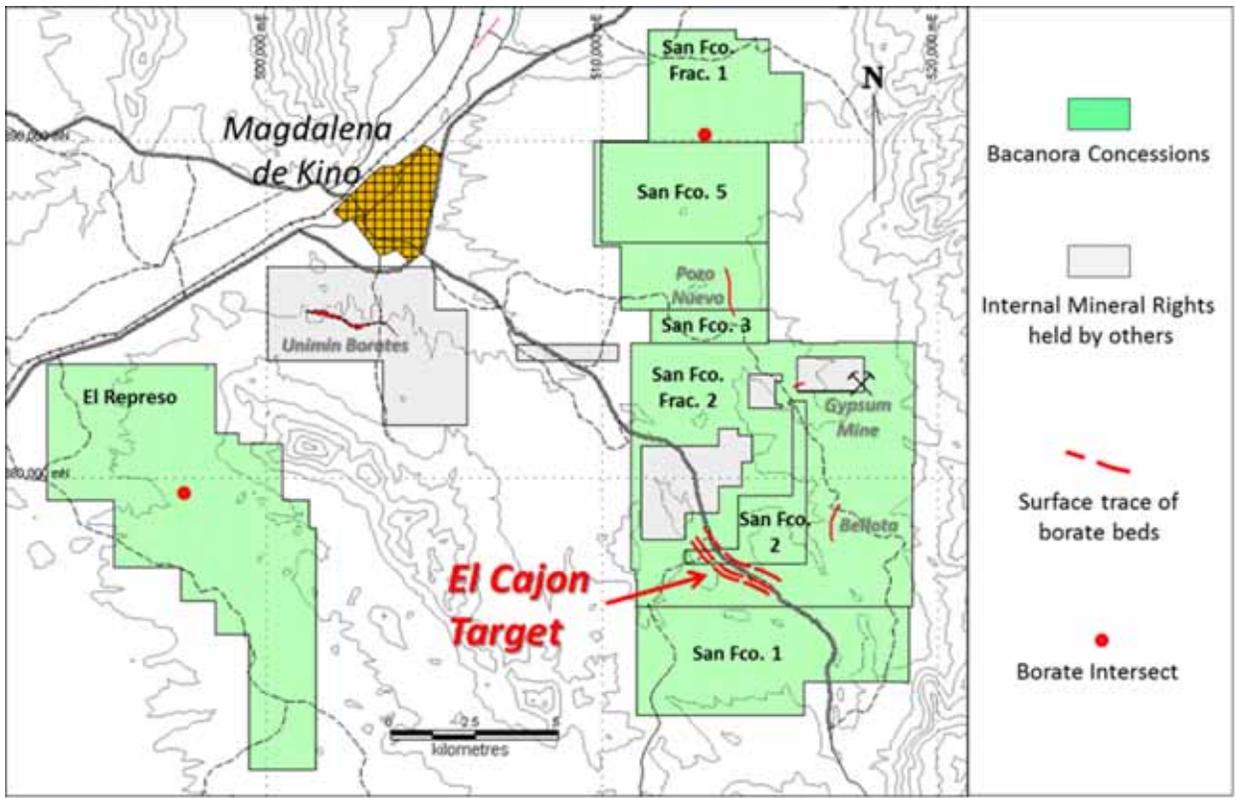


Figure 2. Location of the Magdalena Basin Project

## **5.0 Accessibility, Climate, Local Resources, Infrastructure And Physiography**

### **5.1 Accessibility**

Sonora State has well developed infrastructure. An extensive network of roads, including a four-lane highway (Highway 15) that crosses the state from south to north, joins Sonora with the rest of Mexico and with the United States. The region is well known for cattle ranching, and ranches and fenced zones dot the area. The ranchers have created a network of secondary dirt roads to access the remote areas, and these roads provide excellent access to the Cajon deposit.

### **5.2 Climate and Physiography**

The average ambient temperature is 21° C, with minimum and maximum temperatures of -5° C and 50° C, respectively in the concession areas. Extreme high temperatures, upwards of 49° C occur in summer while winters, although short, are cool comparable with most of Mexico. The accumulated annual rainfall for the area is 452 millimetres. The wet season or desert “monsoon” season occurs between the months of July and September and heavy rainfall can hamper exploration at times. The Sonoran Desert, because of its bi-seasonal rainfall pattern, hosts plants from the agave, palm, cactus and legume family, as well as many others. The Saguaro Cactus, a protected species, is present in the concession area, but not near the Cajon deposit. Exploration work can be conducted year round.

The Cajon deposit is situated a desert climatic zone known as the Sonoran or “Gila” Desert (after the Gila River) an arid desert. The Magdalena Project area concessions lie between the Sierra La Ventana (west and southwest) and the Sierra La Madera (south and east) mountain ranges. These mountains vary in elevation, from ~1,360 m to ~ 2,045 m. The elevation in the Basins varies from between 730 m to 1,000 m. The Cajon deposit is located at the southeastern most portion of the Magdalena Project area where topographic relief is in the order of 100 metres.

### **5.3 Local Resources and Infrastructure**

The main Ferro-Carril Pacifico Railway passes through the town of Magdalena de Kino and connects to the main Port of Guaymas and to the capital city of Hermosillo.

Two high voltage power lines traverse the northern part of the concession area and a natural gas pipeline, constructed in 1986, runs parallel to the electric lines.

Water is supplied to ranchers for irrigation and farming from the El Yeso River, which transects the region. A small block dam impounds water in the Magdalena Project area and creates a small lake. No other source of surface water is available. All water for exploration and mining activities must be pumped from wells. Ranch owners have been supportive in supplying sufficient water for drilling programs.

Availability of water for advanced exploration or mining has not been assessed. Other mining activity in the area, including silver and gypsum mining, has resulted in an influx of workers to the region, and has led to the development of a skilled labour pool.

## 6.0 History

In 1964, US Borax, a subsidiary of the Rio Tinto Group, began exploration in Mexico and successfully discovered borate mineralization near the town of Magdalena de Kino in Sonora State. Following the initial discovery, US Borax, through Mexican subsidiaries and Joint Ventures, explored the surrounding area, known as the Magdalena Basin.

Exploration efforts continued until 2000, and were successful at identifying several borate targets in the Magdalena Basin, including the TDO deposit (also known as the Unimin deposit) for which they completed several pilot plant metallurgy studies. All of the exploration to date on and in the vicinity of the Magdalena Project area was done by US Borax, its subsidiary or through Joint Venture agreements, thereby allowing the geological knowledge to be passed along without loss and the geological model to evolve from program to program. Minera Santa Margarita SA de CV (MSM), a Mexican registered subsidiary of US Borax – Rio Tinto, carried on the exploration campaigns begun by the Joint Venture partners, and in 2002 staked the San Francisco properties that now comprise the Bacanora's Magdalena Concessions. These claims were acquired in April 30<sup>th</sup>, 2008 by a royalty contract between the Bacanora's Mexican subsidiary Minera Sonora Borax SA de CV and MSM.

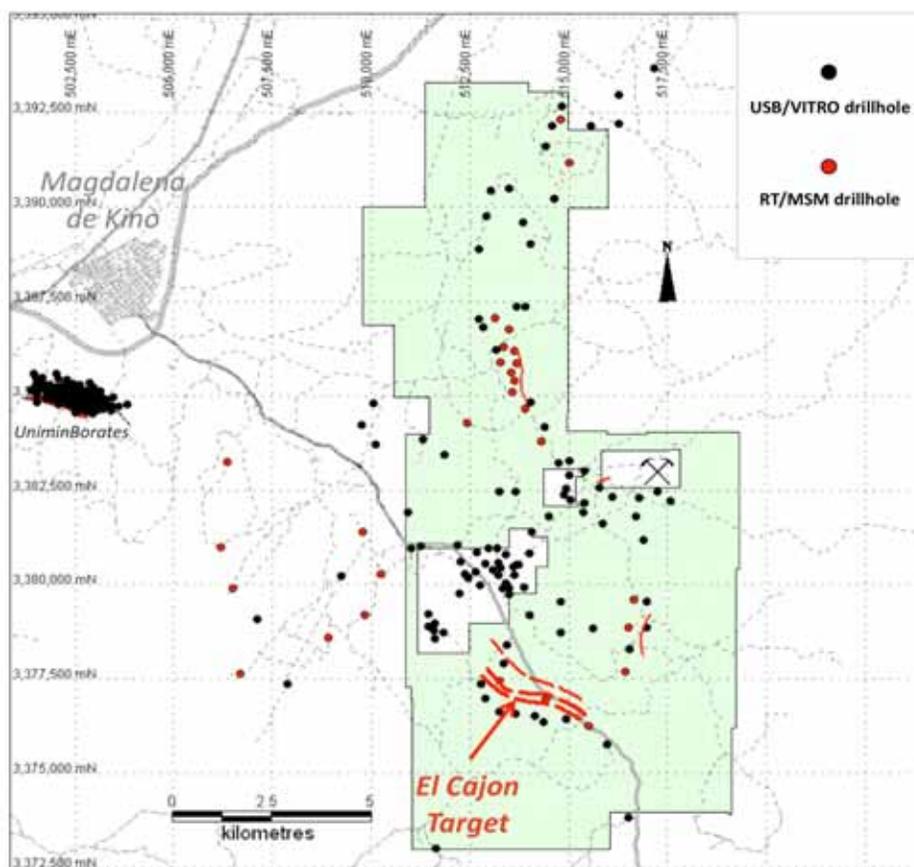
**Table 2. Chronology of exploration in the Magdalena Project area**

<b>Year</b>	<b>Event</b>
1969	First exploration for borates in Mexico by US Borax.
1972	Howlite found in Magdalena.
1976	Establishment of Materias Primas Magdalena (MPM) as JV between US Borax and Vitro
1977	MPM starts drilling in the Magdalena basin and discovers the Tinaja Del Oso Colemanite deposit
1979-1985	Drilling continued at different portions of the basin
1980	Construction of the Magdalena Shaft at the TDO for metallurgical samples
1980	Installation of a Pilot Plant in Hermosillo by Vitro
1982-1986	Different tests and processes were conducted for the beneficiation of colemanite
1987-1990	Intense drilling, reserve calculation studies, construction of a second shaft (Kino Shaft) in the TDO area
1990	Completion of geologic, geotechnical studies in the TDO area
1991	Creation of Minera Santa Margarita by Rio Tinto in order to explore for industrial minerals in Mexico
1992	Dissolution of the USB-Vitro JV. Vitro paid \$US6 million to US Borax to maintain the TDOCD

2002	Rio Tinto staked the San Francisco claims in the Magdalena Basin in order to evaluate the remaining borate potential
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**Table 2 continued. Chronology of exploration in the Magdalena Project area**

2003	First drilling campaign in Magdalena by MSM at Cajon and Bellota targets. Mapping and sampling
2004	More drilling at Pozo Nuevo and Tigre targets. First gravity survey. Ground mag in the central portion of the basin
2005	Drilling at Pozo Nuevo and Escuadra targets. Complete gravity survey (610 stations)
2006	Reduction of land from 23k Ha to 12.6k Ha.
2007	Completion of geologic reports and economic exercises from TDO, Cajon and Pozo Nuevo targets
2008	Contract between MSM and MineraSonora Borax (MSB - Bacanora Minerals) to acquire the San Francisco claims.
2009	Completion of and submittal of a N1-43101 Technical Report and Bacanora is listed at the TSX.
2010	In-fill drilling at the Cajon Target by MineraSonora Borax.



**Figure 3. Locations of drill holes on the Magdalena Project area prior to Bacanora**

## **7.0 Geological Setting**

### **7.1 Regional Geology**

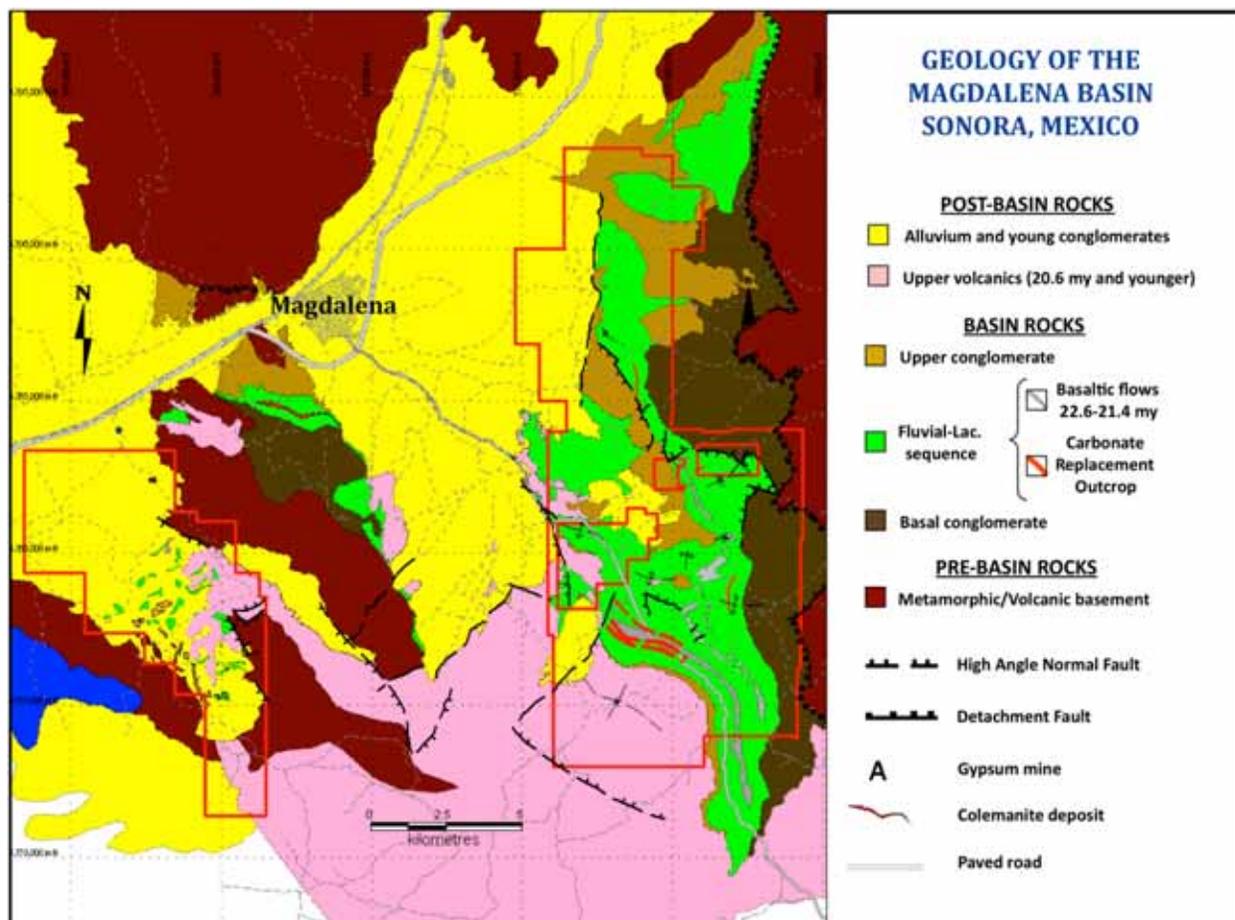
The geology of the Magdalena basin (Figure 4) is very complex due to its syn-kinematic origin and posterior geologic events occurred in the region. In general, the basin is a topographic depression floored and surrounded by metamorphic and volcanic rocks. It has been recognized as the upper plate of the Magdalena-Madera metamorphic core complex (MCC). Both plates are separated by a major low-angle detachment fault. The lower plate is composed two basement lithologies:

- 1) Metamorphic, composed of mylonites, gneisses and leucogranites and
- 2) Volcanic, composed of a latite flow

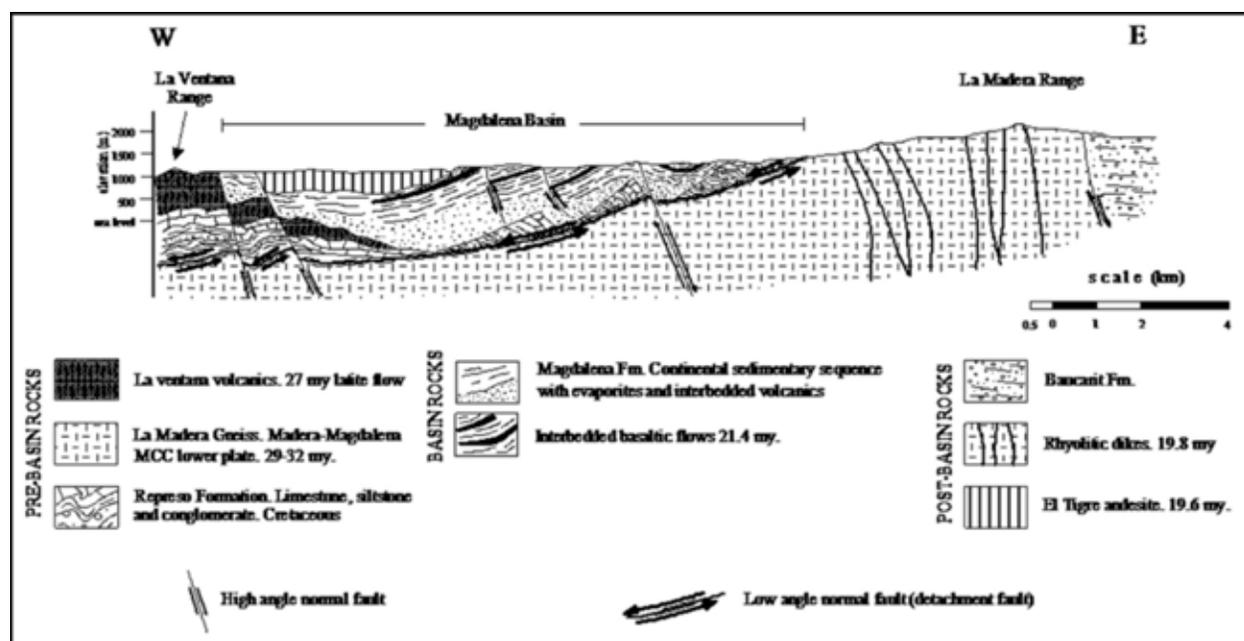
The upper plate is composed of three stacked gradational sedimentary sequences named from bottom to top: Bellota, Cajon and TDO (Figure 5). Every sequence hosts borate mineralization located in fine-grained fluvial-lacustrine successions. For the purpose of this report, only the Cajon sequence is described in detail.

Several basalt flows are interbedded within the sedimentary sequences with ages ranging from 22.6 to 21.4 Ma. A bimodal volcanic sequence dated in 20.6 Ma covers the basinal sediments marking the end of the basin development.

In general, fluvial-lacustrine sediments of the Magdalena basin were deformed by extensional tectonism. It is common to observe mudflows, turbidites, slumping breccias and “olistoliths” (big boulders composed of pre-basin rocks) cutting the sedimentary bedding. In addition, a series of anticlines and synclines as well as listric faults delimiting structural blocks are common structures along the basin. The associated borate mineralization is a product of diagenetic processes. All these features indicate that the Magdalena basin was syn-extensionally developed along the neighboring metamorphic core complex. The basin’s development occurred during the period of 26.9 to 20.6 Ma (Eocene to Miocene, Miranda-Gasca et al., 1998).



**Figure 4. Geology of the Magdalena Basin and Project area**



**Figure 5. Schematic Geological Section through the Magdalena Basin (Vidal, 2007a)**

## 7.2 Property Geology

The Cajon borate deposit is situated stratigraphically in the Cajon-Pozo Nuevo sequence that is an intermediate sedimentary sequence in the Magdalena Formation (Figure 6) and overlies by depositional contact the Bellota-Yeso sequence. Structurally, the Cajon-Pozo Nuevo sequence has been folded into a series of westward-plunging anticlines and synclines. It has been divided into four units, described in detail as follows:

### Lower Cajon unit (Ltc)

This unit crosses the northern portion of the Cajon deposit describing a series of westward-plunging anticlines and synclines. It is composed of thin to medium bedded, tan and greenish, tuffaceous sandstone and siltstone with associated tuffs and tuffites. In fact, a yellowish lithic tuff has been observed in normal contact with the upper Bellota conglomerate. It changes laterally into a tuffaceous sandstone. In the central area, it is in structural contact with the upper conglomerate from the Bellota sequence across a high angle normal fault. To the north, it is in normal contact with the Bellota basalt. Thickness varies in the range of 170-250 m, being thicker in the central portion.

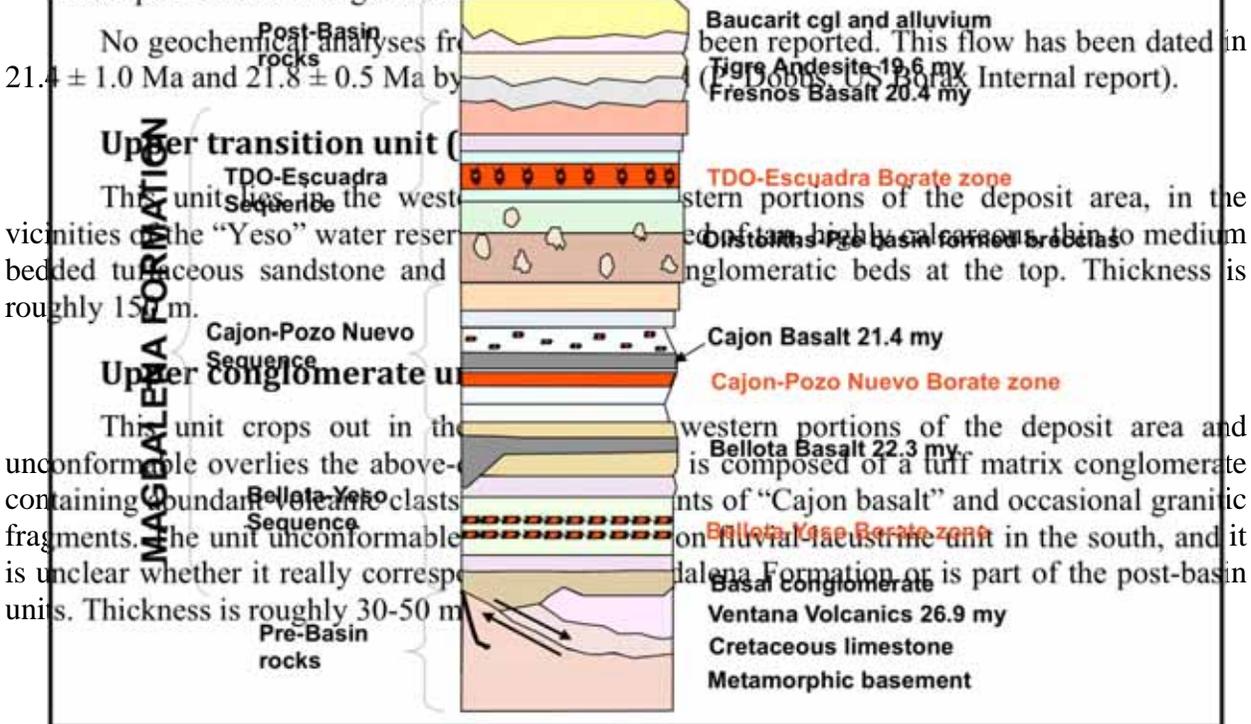
### Fluvial-Lacustrine unit (Lacc)

This unit runs across the central and western portions of the deposit area in transitional contact with the above-described unit. It is composed of thin-medium bedded, greenish, pink and light gray tuffaceous-calcareous mudstone with scarce siltstone and sandy horizons. Thickness varies from 200 to 600 m, being thicker in the south and central portions of the El Cajon deposit area.

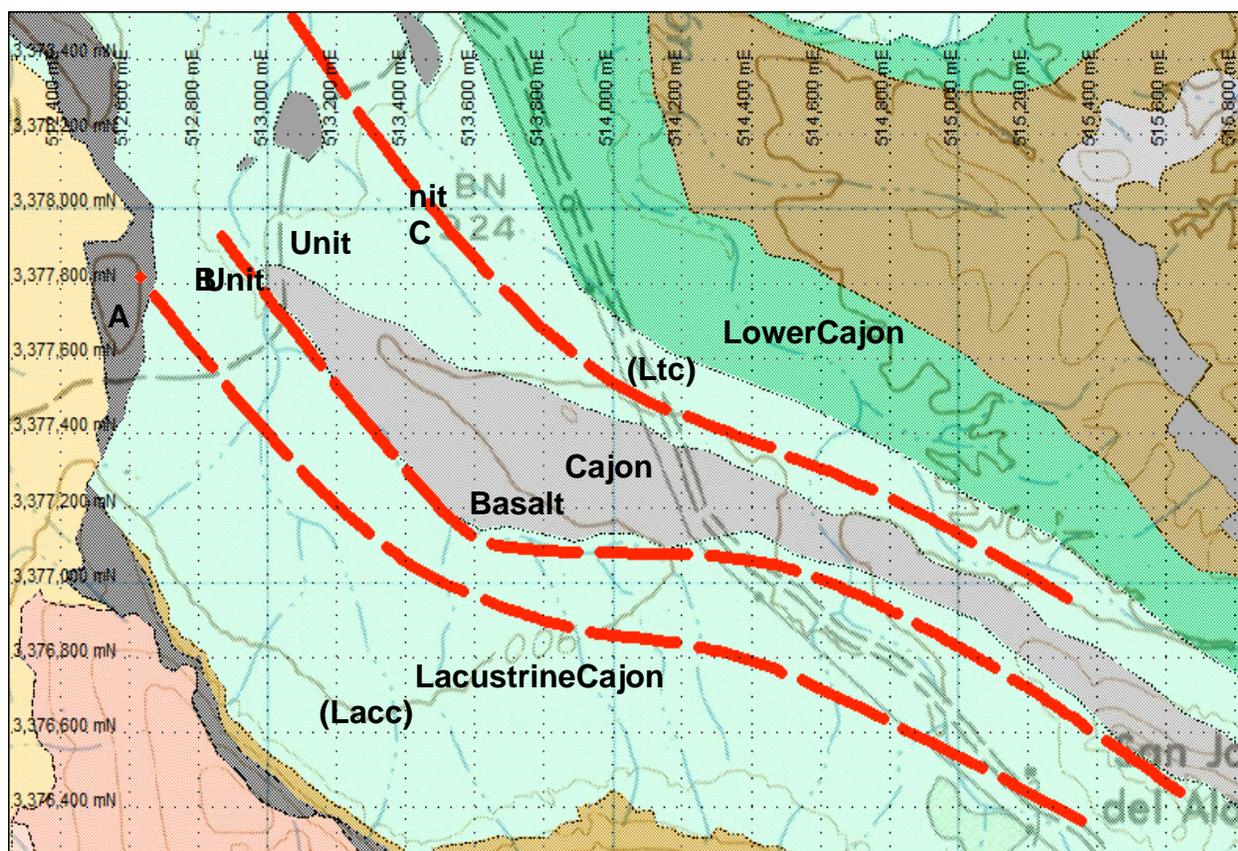
The unit contains the carbonate replacement zone similar to the surface expression of the TDO colemanite deposit and the Bellota sequence (UNIT C). Thickness ranges between 8 and 12

m. Again, good geochemical B and pathfinder element anomalies have been reported. This horizon contains abundant calcite in masses and nodules with radial structures (after borate ?) and has also been considered as one of the primary drill targets in the project area. It contains scarce gypsum in veinlets, and howlite and colemanite surface occurrences have been reported from this unit.

This unit also contains an interbedded basaltic flow that has been denominated "Cajon" basalt. It is composed of greenish-gray basalt with a characteristic diabasic texture. It is highly oxidized, gas rich in some places with calcite filling cavities and fractures. Thickness roughly ranges from 40 up to 80 m, pinching out toward the southwestern portion and lensing out at the NW most portion of the target area.



**Figure 6. Stratigraphy of the Magdalena Basin**



**Figure 7. Surface geology of Cajon Deposit.**  
Units A and B are surface projection from drilling.

## 8.0 Deposit Types

Borate deposits can be divided into five main types (Barker and Lefond, 1985):

- 1) Precipitation from brines in a permanent or semi-permanent shallow lake or deep lake, known as lacustrine deposits. For this type of deposit to be formed the region must be arid, as borates have a high solubility. In addition, there must be an interior drainage system to concentrate the boron and minimize the dilution of boron from excess water, ions or sediment. Examples of this type of deposits include: Death Valley California and Bigadic, Turkey. This type of deposit produces most of the world's borates and is the most studied.
- 2) Crusts or crystals in mud of playas within near-surface sedimentary layers. These deposits are formed by repeated evaporation of incoming boron-bearing water by evaporation of groundwater. Repeated solution-crystallization cycles result in bedded borate strata. These types of deposits are found in Peru, Turkey and USA.
- 3) Direct precipitation near springs or fumaroles as a result of precipitation upon cooling of boron-bearing water and gases. This type of deposit is found in Italy, India and South America.
- 4) Evaporation of marine water such as in Germany and Russia. This type of deposit is usually very small and is most likely related to mining byproducts of evaporates and gypsum as opposed to naturally occurring.
- 5) Crystallization at or near granitic contacts or veins. Residual fluids associated with siliceous intrusions contain boron that is mobilized into the country rock through fluids. Boron may also be leached. No known deposits.

All borate deposits require that certain geological and environmental conditions were present. A borate deposit must have a source of water that contains anomalous amounts of dissolved borate. As well, a borate deposit must have a mechanism that transported the water to the site of deposition and prevented it from escaping to the sea. Finally, a borate deposit requires a geological process that was capable of concentrating the brine solutions to the point of borate crystallization. As the evaporation of seawater progresses, the deposition of borates from ulexite, colemanite and/or howlite will occur. The specific mineralogy of the borates deposited will depend on the ratio of boron to calcium and sodium in the water, as well as on any other elements (contaminants) present at the times of borate mineral precipitation.

Borate mineralization in the area of the Concessions is considered to be lacustrine in origin (Type 1) and is analogous to that found at Death Valley and the Bigadic deposits.

## 9.0 Mineralization

The Magdalena basin has principally been explored for borates, which occur there as the minerals colemanite ( $\text{Ca}_2\text{B}_6\text{O}_{11}\cdot 5\text{H}_2\text{O}$ ) and howlite ( $\text{Ca}_2\text{B}_5\text{SiO}_9(\text{OH})_5$ ) in bed-parallel, discontinuous, lenticular millimetre- to metre-scale layers interbedded with and hosted in gently to moderately dipping carbonaceous fluvial-lacustrine sedimentary packages.

The concentration of mineralization is primarily affected by the diagenetic processes responsible for the formation of enriched borate zones. Secondly, the grade of the mineralization is affected by leaching of the boron from the borates. Boron is stable in alkaline environments but is highly soluble in acidic conditions, such as at surface. Leaching of boron and replacement by calcite and other carbonates can result in distinctive carbonate replacement zones as a surface expression of underlying borate mineralization.

Due to the high solubility of boron, colemanite is usually altered to howlite, by adding silica, and calcite by replacing the borate radical by carbonate. In most borate deposits there is a geologic affinity between boron, lithium, strontium, arsenic and magnesium. These elements are frequently used as pathfinders during early stage boron exploration.

The aim of the exploration programs is to identify bulk-tonnage borate deposits with a proposed cut-off grade of 8%  $\text{B}_2\text{O}_3$ .

### Borates in Magdalena

At least three pulses of borate mineralization are recognized in the Magdalena Project area. The first one occurred during a period of relative tectonic stability that allowed the deposition of the “Bellota” fluvial-lacustrine sequence and the first borate pulse. Another period of tectonism is recorded by the upper “Bellota” conglomerate and the “Bellota” basalt, dated in  $22.3 \pm 0.3 \text{ Ma}$  (Ar/Ar-whole rock) therefore, the lowermost borate mineralization occurred after the deposition of the Basal conglomerate and prior to the extrusion of the “Bellota” basalt between  $24\text{-}23?$  to  $22.3 \text{ Ma}$ .

The second borate pulse is associated to a period of local stability but abundant volcanic activity in the region. The “Cajon” basalt is interbedded within the fluvial-lacustrine sequence and borates occur both beneath and above the basaltic flow. The “Cajon” basalt has been dated in  $21.4 \pm 1.0 \text{ Ma}$  (K-Ar).

After another period of tectonic instability, marked by the presence of boulders of pre-basin breccias and conglomerates, the youngest and more important borate mineralization occurred in the basin with the deposition of the Tinaja Del Oso in the west and Escuadra sequences in the northeast. No volcanic activity has been recorded during that period, but it can be bracketed between  $21.4 \pm 1.0 \text{ Ma}$  and  $20.6 \pm 0.1$  which is the period between the deposition of the “Cajon” basalt and the reported age of the “Fresnos” basalt, which is the first post-basin unit that records the end of the Magdalena basin.

## El Cajon Deposit

Borate mineralization at the El Cajon deposit consists primarily of colemanite and howelite. These minerals occur in three horizons: Units A, B and C. The units are situated within the Fluvial-Lacustrine member of the Cajon-Pozo Nuevo sequence. The mineralized units dip gently to moderately to the southwest. The thickness of units estimated from drill intercepts ranges for unit A from 2.13 to 4.6 metres and average 3.58 metres; for unit B from 3 to 7.6 metres and average 4.8 metres and for unit C from 2.36 to 10.56 metres, averaging 7.74 metres (Table 3). The units have been drill tested along a strike length of 2,200 metres and open on strike in either direction. The down dip extent of the mineralization tested by drilling is 900 metres and remains open at depth.

**Table 3. Thickness and grade characteristics of the El Cajon Borate Deposit**

Unit	Thickness		Average
	Minimum	Maximum	
A	2.13	4.6	3.58
B	3.0	7.6	4.8
C	2.36	10.56	7.74
	Grade		Average
	Minimum	Maximum	
A	8.1	11.03	10.25
B	8.1	13.05	9.91
C	5.76	13.78	8.08

Petrographic analysis from nine drill core samples from units B and C of the Cajon deposit was conducted by Martin Vidal. The analysis indicated that for unit B colemanite occurs in individual semi-euhedral crystals (<1 mm in diameter), broken and partially replaced by calcite. Very small amounts of howlite were also noted. In Unit C colemanite occurs in howlite nodules. The howlite nodules themselves exhibit partial replacement by calcite.

## 10.0 Exploration

Bacanora conducted diamond drilling campaign at El Cajon deposit in 2010. A total of 18 holes were drilled in order provide in-fill data between holes previously drilled by Rio Tinto the US Borax – Vitro Joint Venture. Details and results of Bacanora's drilling are found in Section 11.0: *Drilling*.

## 11.0 Drilling

Bacanora's drilling campaign in the Magdalena basin was conducted from May to September 2010 at the El Cajon deposit, located at the SE portion of the Magdalena basin. Perforaciones Godbe de Mexico SA de CV a Mexican subsidiary of Godbe Drilling LLC, based in Montrose, Colorado was the drilling company contracted by Bacanora.

A total of 1,984.6 m (6,511 ft) using a NQ-core recovery diamond drilling technique were drilled in eighteen holes. Drill sites were laid out on a 200 metre grid for Resource Estimation purposes (Figure 8).

Drill core was moved from the drill sites by Bacanora personnel to a secure compound in Magdalena de Kino where it was logged, split and stored. In addition to logging of geological parameters in drill core, core recovery, recovery-of-broken intervals and rock quality designations were measured.

The objective of the diamond drilling was to intersect the down dip expression of two outcropping carbonate replacement horizons (CRO) with similar characteristics to the surface expression of the borate mineralization at the TDO colemanite deposit located in the western portion of the basin and the Pozo Nuevo prospect, which is another Bacanora drill target within the basin. Details of the Cajon deposit geology and mineralization can be found in Sections 7.2 and 9.0 of this report.

The relationship between sample length and the true thickness of the mineralization varied 93% to 96% of sample length being equivalent to true thickness depending on the area of the deposit and the dip for the colemanite horizons at particular intercept.

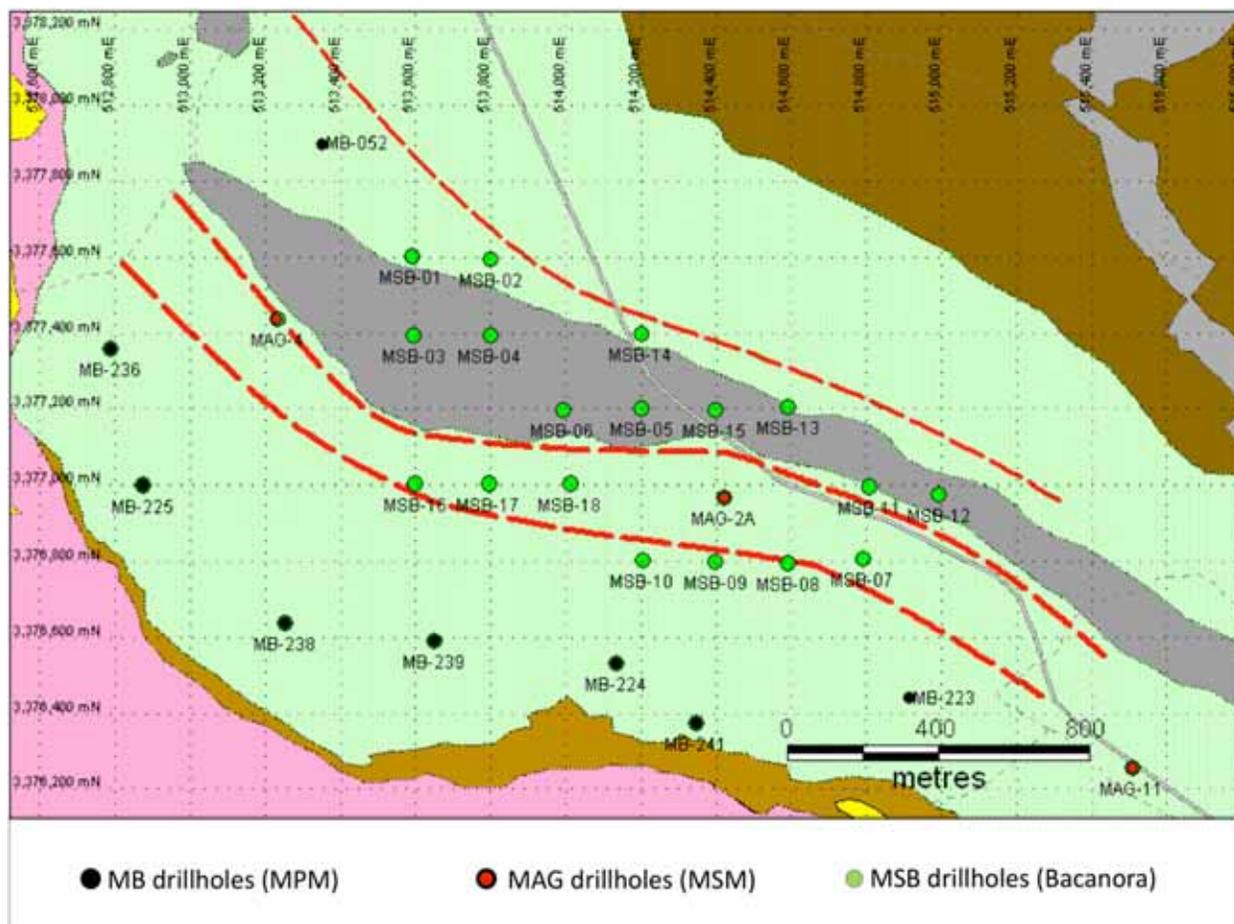


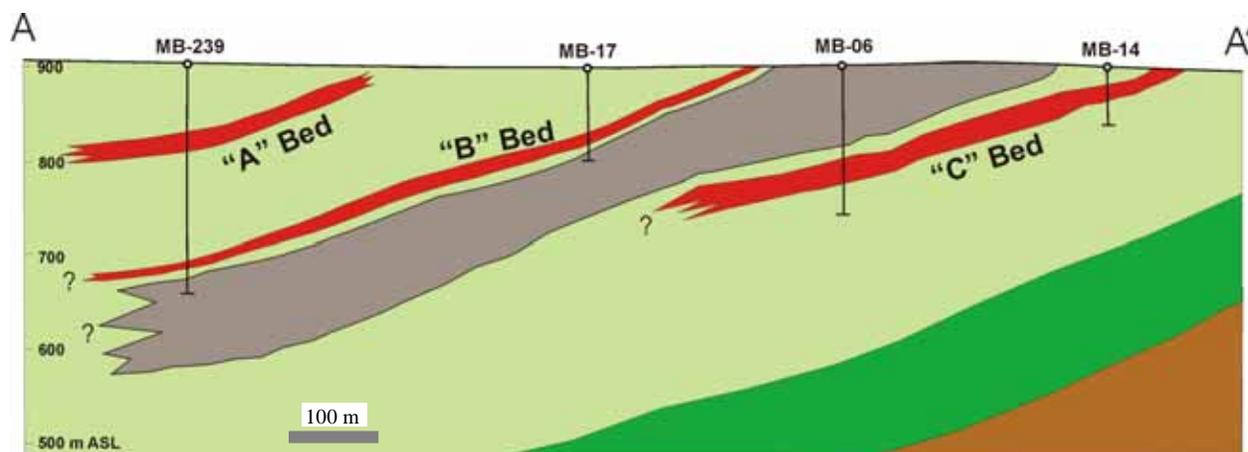
Figure 8. Drill hole location plan El Cajon Deposit

**Table 4. Diamond Drill Hole Locations – Bacanaora Minerals Ltd**

Hole	Easting*	Northing	Elev (m)	Depth (m)	Azimuth	Inclination
MSB-01	513589	3377602	893.00	44.20	0	-90
MSB-02	513800	3377595	895.00	35.05	0	-90
MSB-03	513595	3377395	896.50	105.46	0	-90
MSB-04	513798	3377396	905.00	117.65	0	-90
MSB-05	514201	3377201	902.50	138.68	0	-90
MSB-06	513992	3377198	899.50	160.32	0	-90
MSB-07	514791	3376806	897.50	62.78	0	-90
MSB-08	514592	3376794	903.00	262.13	0	-90
MSB-09	514398	3376799	906.00	129.84	0	-90
MSB-10	514204	3376802	904.50	160.32	0	-90
MSB-11	514808	3376996	904.00	132.90	0	-90
MSB-12	514994	3376978	910.00	120.70	0	-90
MSB-13	514591	3377204	892.00	71.93	0	-90
MSB-14	514200	3377397	898.50	62.48	0	-90
MSB-15	514397	3377197	904.50	91.59	0	-90
MSB-16	513600	3377004	899.00	108.50	0	-90
MSB-17	513795	3377003	897.50	99.36	0	-90
MSB-18	514010	3377004	894.00	80.77	0	-90

\* Map Datum: NAD 27, zone 12.

The drilling program successfully intersected the predicted colemanite horizons. The interpretation of the colemanite-bearing horizons intersected by the drilling is that of two units dipping gently to the southwest (Figure 9). Significant borate assays are listed below in Table 5.



**Figure 9. Geological Cross Section through the El Cajon Borate Deposit**

**Table 5. Significant Borate Drill Intercepts, El Cajon Deposit**

Hole No.	From (m)	To (m)	Interval (m)	B <sub>2</sub> O <sub>3</sub> %
MAG-2A	178.61	184.4	5.79	13.78
MB-224	249.63	252.68	3.05	8.4
MB-224	263.35	267.92	4.57	10.6
MB-225	81.99	86.56	4.57	10.53
MB-236	61.26	64.31	3.05	8.1
MB-239	73.76	78.33	4.57	11.03
MB-241	182.88	185.01	2.13	11
MSB-01	14.33	16.69	2.36	8.05
MSB-01	26.82	30.12	3.3	9.85
MSB-02	14.63	21.44	6.81	9
MSB-03	56.69	64.92	8.23	6.55
MSB-03	73.56	83.39	9.83	5.11
MSB-04	71.63	75.69	4.16	5.36
MSB-04	83.84	89.92	6.08	6.36
MSB-05	67.99	72.24	4.25	10.04
MSB-05	79.25	85.34	6.09	7.07
MSB-06	97.69	108.25	10.56	7.97
MSB-10	122.2	125.7	3.5	13.05
MSB-11	93.88	98.45	4.57	10.8
MSB-12	82.6	85.95	3.35	7.4
MSB-14	22.86	25	2.14	9
MSB-15	66.75	69.8	3.05	8.35
MSB-15	88.39	91.59	3.2	14.65
MSB-16	82.91	87.48	4.57	8.1
MSB-17	75.29	78.33	3.04	9.5

## 12.0 Sampling Method and Approach

A total of 610 samples were obtained by splitting the core in half with a manual core splitter. One half was sent for assays and the remaining half retained for future analysis. The samples have a standard length of 1.52 metres (5 ft), except on the geologic contacts where the length is adjusted to the contact. For the El Cajon drilling campaign, an average length of was 1.59 m per sample was obtained from a total of 930.69 m of core.

The samples were bagged and labelled with a sequential unique sample identification number. Mr Martin Vidal, Vice-president of exploration for Bacanora Minerals Ltd supervised the core sampling.

Factors that could materially impact the reliability and accuracy of results are: core recovery; samples size and nature of the mineralization. Core recovery for the sampled intervals was estimated to be 95 %, based on core measurements. Therefore core recovery is not believed to be a significant factor affecting the reliability of the results in this case. Sample size – split NQ drillcore is a factor as the mineralization can be subject to nugget effects. Clearly larger sample size will benefit the reliability and confidence in assay data. This can be achieved initially through drilling with larger diameter core, such as HQ or taking bulk samples.

The relatively undeformed and layered nature of the sedimentary rock succession that hosts the borate mineralization and the discernable colemanite horizon, which varies between 2.13 and 10.56 metres, within the sediments were the determining factors in establishing sample interval.

A list of relevant samples is found in Section 11.0, Table 5.

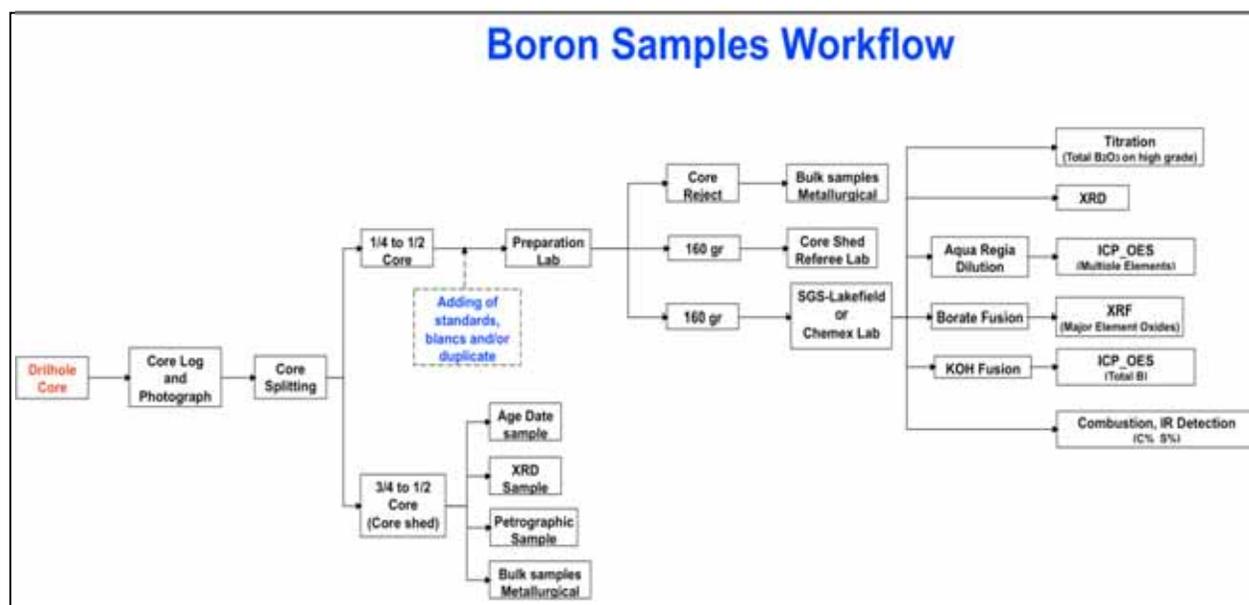
### 13.0 Sample Preparation, Analyses And Security

Split drill core samples were shipped to an SGS Laboratories sample preparation facility in Durango, Mexico for preparation. Prepared sample pulps were then shipped to SGS Minerals Research Limited in Lakefield, Canada, for assay and analysis. SGS Lakefield research is an ISO 14001-2004 certified laboratory in Canada and it's preparation facility in Mexico has received ISO 17025 certification.

Sample preparation was conducted according to the regular SGS commonly used rock, drill core and chip sample procedures which consist of crushing the sample to - 5 mm sized material, splitting off 250gm of that and pulverizing the split sample to better than 85% passing through a 75 micron aperture screen.

All samples were analysed by full ICP\_OES method in a suite of 32 elements (Ag, Al, As, B, Ba, Be, Bi, Ca, Cd, Co, Cr, Cu, Fe, K, Li, Mg, Mn, Mo, Na, Ni, P, Pb, Sb, Se, Sn, Sr, Tl, Ti, U, V, Y, Zn; present in g/t). In addition, a borate assay was determined by colourimetric titration methods on an aqua regia digested sample solution. The value determined from titration was converted into percent borate using the formula:  $B_2O_3 = (B \times 3.22)$ .

The chart below illustrates the general work flow for the handling, treatment and analysis in which the Bacanora core samples can be tested.



**Figure 10. Flow chart of core sample handling**

As part of an internal Quality Assurance/Quality Control protocol, an in-house prepared standard was inserted on average every 23rd sample. In addition, 38 duplicate analyses were performed by the laboratory as their own internal quality control.

The sample used as the standard was collected from a boron deficient, tuffaceous clay horizon that has been used as a marker bed in the borate-bearing Tubutama basin in Sonora, Mexico and is referred to as: *Standard TT*. The standard was prepared at Laboratorio Metalurgico LTM SA de CV in Hermosillo. Approximately 50 kg sample was bulk milled to  $<100\mu\text{m}$  and homogenized in a single batch in a drum mixer for 24 hours. Approximately 100 gram sub-samples were then split from the standard and sealed in plastic bags ready for insertion into sample batches.

Analytical ranges were determined from 3 laboratories (SGS-Lakefield, ALS-Chemex and University of Sonora) with additional analytical data collected in other projects were the same standard was used to refine the precision of the standard. For this work minimum and maximum accepted values from mean are  $\pm 10\%$  except for boron and arsenic since the standard is low grade. A fixed value of 10 units was applied to these elements.

**Table 4. Analyses of Bacanora Boron standard**

Standard TT	Values	B (ppm)	As (ppm)	Ca (%)	Li (ppm)	Mg (%)	Sr (ppm)
Non-boron anomalous, tuffaceous clay that has been used as a marker bed in the Tubutama basin, Sonora, Mexico.	Average	18	19	3.0	231	0.9	9916
	Max	79	22	3.3	260	1.0	11000
	Min	4	16	2.7	200	0.9	5000
	Std.Dev	15.4	2.4	0.14	13.2	0.04	1813

From the QA/QC analysis it was determined that most elements correlate well with the standard, only randomly picked samples seem to be out of range without any marked tendency.

Boron presents a case of possible systematic error in three consecutive samples that was fixed at the end with the re-assaying of several samples. This might be an effect of the known high solubility of boron, especially at low concentration levels. Strontium is over-estimated, since most samples are above the value set for the standard. However, this might be due the fact that there is a maximum detection limit with 11,000 ppm for Sr.

The use of a second standard for high grade ore is highly recommended in further drilling campaigns and sample repeats in other labs must be also included in order to maintain a better quality control.

In the writer's opinion sample preparation, security and analytical procedures were adequate for this stage of exploration and comply with industry best practices.

## 14.0 Data Verification

Throughout Bacanora's drilling campaign in 2010 the following quality control measures and data verification procedures were applied:

1. A sample standard, as discussed in Section 13.0 was inserted regularly in sample batches.
2. Samples were analysed and assayed at an Industry recognized and certified laboratory.
3. Drill core handling was conducted in a secure facility by at most 3 persons known to the writer.
4. Drill hole locations were surveyed by global position instrument (GPS). The writer checked a random sample of the drill hole locations and found them to be located as represented. Drill holehole elevations were compared with elevations extracted from a 30 m DEM in order to detect any displacement.
5. Data was validated with QA/QC tools in order to detect depth inconsistencies, overlaps or gaps in the sampling and lithological logs.

In addition, the writer examined the drill logs and laboratory assay and analytical reports and found these to be in order.

## 15.0 Adjacent Properties

The Magdalena Basin hosts to several industrial minerals deposits, including the Unimin borate deposit and the Yeso Gypsum Mine.

### 15.1 Unimin Borate Deposit:

The Unimin or Tinaja Del Oso (“TDO”) deposit is located in a concession that was originally part of the US Borax – Vitro joint venture lands. The deposit was discovered in 1977 and has unpublished, internal US Borax resource estimates.

The TDO deposit consists primarily of colemanite and howlite mineralization. It outcrops for approximately 3,000 m and is 30 m to 47 m thick (Vidal, 2007b). The lowest zone contains 2.3 metres of howlite and colemanite hosted in black shales. The unit is unconformably overlain by a barren sedimentary breccia which in turn is overlain by a turbiditic breccia containing gypsum crystals. Above this unit a clay unit with marl containing colemanite rosettes represents the central portion of the deposit. The thickest zone of the deposit is approximately 12 m and is comprised of sedimentary mudstone breccia. The colemanite is found in the breccia as veinlets and disseminations (Vidal, op. cit.).

Exploration by the joint venture on the TDO deposit included 2 shafts and a total of 128 drill holes. All holes were vertically drilled on a 50 m x 50 m grid pattern. There was sufficient drilling to determine a US Borax internal reserve estimate (non-43-101 compliant) on the central and eastern portion of the deposit. Insufficient drilling in the western portion of the deposit inhibited the development of an ore reserve across the entire deposit. The internal calculations used a cutoff grade of 10% B<sub>2</sub>O<sub>3</sub> and estimated >3 Million tons of pure colemanite ( or 3.03 million tons of boric acid equivalent). The assumptions surrounding this estimate are unknown.

Internal metallurgy tests, processing plans, recovery tests and economic models were also conducted on this deposit. When US Borax and Vitro dissolved the joint venture, Vitro purchased the TDO deposit concession and subsequently entered into a joint venture agreement with Unimin. They currently hold the title to the concession.

### 15.2 Yeso Mine:

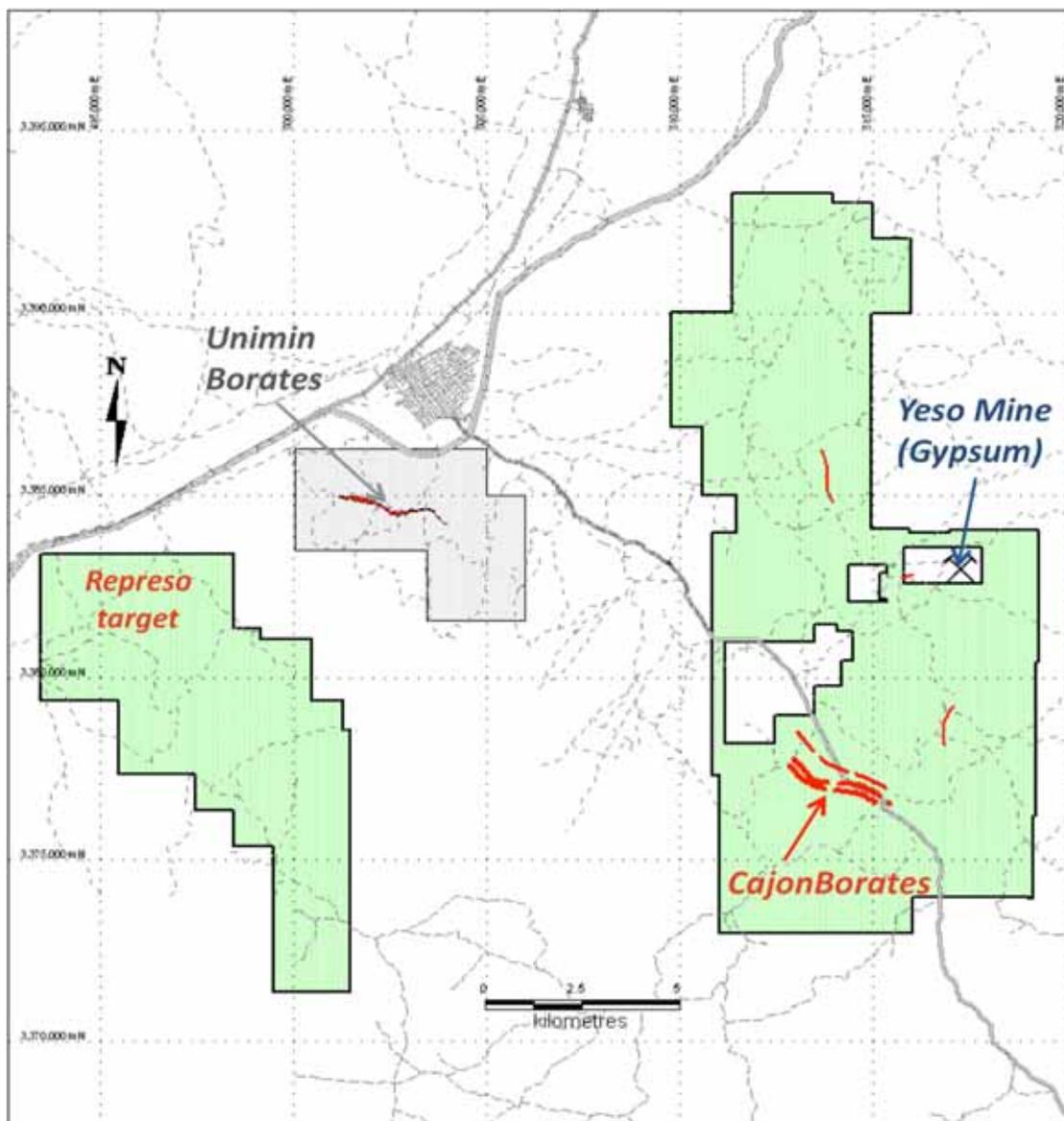
There is no published information on the Yeso mine. The following information was provided as personal communication from Vidal 2009 based on field visits between 1995 and 2008.

The Yeso Gypsum Mine is located in the eastern portion of the Magdalena basin. The deposit is a northwest-southeast trending syncline with the mine pit located in the middle of the syncline. Both margins (northeast and southwest) are composed of two small anticlines.

The deposit is a gypsiferous lenticular body composed of four major units. The lowest unit is composed of 80-85% of gypsum (approx.) with black, carbonaceous shales with arsenic (realgar and orpiment) in the matrix. This unit contains less than 1% of disseminated borates. The second unit, a one metre thick black carbonaceous shale, conformably overlies the gypsum unit and is barren. The third unit is composed of 85-90% gypsum and 1-2% borates (no visible

colemanite, the borate is howlite altered to calcite) in a light gray to black carbonaceous shaly matrix. It conformably overlies the lower two units. The uppermost level is composed of light gray shale with 50-60% gypsum and 2-3% of disseminated and nodular borates being altered to calcite. The nodules are 1-5 cm in diameter.

The current mine production is 10,000 tons per month, which are being purchased by two cement plants located nearby Hermosillo (5,000 tons each).



**Figure 11. Map of Adjacent properties**

## 16.0 Mineral Processing and Metallurgical Testing

Preliminary grain size and de-sliming analyses are currently in progress at the Laboratorio Metalurgico in Hermosillo. Two composites from units B and C have been produced (Tables 5). Borate assays by titration are being conducted in-house. Material used for the first tests are rejects from the SGS sample preparation facility in Durango, Mexico.

Composite from Unit B was elaborated by mixing 7 samples and Composite Unit C is composed by 17 samples as follow:

**Table 5. Samples used in the preparation of composite samples**

Composite Unit B	Composite Unit C
MSB-10 BM00464	MSB-01 BM00089
MSB-10 BM00465	MSB-01 BM00090
MSB-16 BM00614	MSB-02 BM00107
MSB-16 BM00615	MSB-02 BM00108
MSB-16 BM00616	MSB-04 BM00193
MSB-17 BM00646	MSB-04 BM00194
MSB-17 BM00647	MSB-05 BM00217
	MSB-05 BM00218
	MSB-05 BM00243
	MSB-05 BM00244
	MSB-05 BM00228
	MSB-11 BM00500
	MSB-11 BM00501
	MSB-15 BM00595
	MSB-15 BM00596
	MSB-15 BM00604
	MSB-15 BM00605

The composites were homogenized separately by the coning and quarter splitting method in order to obtain 5.2 kg of representative sample from each composite. A further 200 grams split was used for ore-fed analysis.

### 16.1 Grain Size Analysis:

A grain size analysis was conducted in each composite using 5 kg of sample, using sieves 10, 60, 100, 140, 200 y 325 mesh, all of the fractions were weighted and assayed by titration. Sample BM00428 was used as standard. Results of the analysis are reported in tables 6, 7 and 8.

In both composites, the highest B<sub>2</sub>O<sub>3</sub> concentrations remained in the coarser fractions, obtaining better results in fraction +60M for composite Unit B with 13.75 % B<sub>2</sub>O<sub>3</sub> and in +10M for composite Unit C with 11.98%B<sub>2</sub>O<sub>3</sub>.

Further metallurgical tests are ongoing and results will be reported when received by Bacanora.

**Table 6. Borate assays for differing size fractions, Composite B**

SIEVE NO.	RetWeight (gr)	Weight (%)	B <sub>2</sub> O <sub>3</sub> (%)	TOTAL (mg)
+10M	768	15.42	12.03	9,239.04
+60M	2,324	46.67	13.75	31,955.00
+100M	296	5.94	9.60	2,841.60
+140M	120	2.41	6.80	816.00
+200M	112	2.25	8.06	902.72
+325M	522	10.48	8.80	4593.60
-325M	838	16.83	9.50	7961.00
TOTAL	4,980	100.00		58,308.960
% B <sub>2</sub> O <sub>3</sub> FED CALC			11.71	
% B <sub>2</sub> O <sub>3</sub> FED ASSAYED			11.54	
STD BM 00428			10.41	

**Table 7. Borate assays for differing size fractions, Composite C**

SIEVE NO.	RetWeight (gr)	Weight (%)	B <sub>2</sub> O <sub>3</sub> (%)	TOTAL (mg)
+10M	916	18.55	11.98	10,973.68
+60M	2,220	44.96	11.48	25,485.60
+100M	300	6.08	8.52	2,556.00
+140M	162	3.28	6.96	1,127.52
+200M	114	2.31	6.98	795.72
+325M	228	4.62	7.83	1,785.24
-325M	998	20.21	9.71	9,690.58
TOTAL	4,938	100.00		52,414.40
% B <sub>2</sub> O <sub>3</sub> FED CALC			10.61	
% B <sub>2</sub> O <sub>3</sub> FED ASSAYED			10.97	
STD BM 00428			10.55	

## 17.0 Mineral Resource And Reserve Estimates

In November, 2010, Minera Sonora Borax SA de CV, fully owned subsidiary of Bacanora Minerals Ltd. (Bacanora or the Company) commissioned MrRodrigo Calles Montijo, Lic. Eng. of ServiciosGeologicos IMEX SC (IMEx) to prepare an independent resource estimate for the El Cajon deposit. Mr. Calles-Montijo is a licenced geologist engineer and has preformed resource estimates for industrial minerals. He is independent of Bacanora Minerals Ltd and its Mexican subsidiary companies.

The present resource classification was performed in conformitywith CIRSCO-style resource-reserve classification system. The resource estimation preliminarily focused on the estimation of the tonnage, thickness and grade of the borate mineralization presented in this target. The estimation was performed using the method of geometric polygons. The vertical extension of the mineralization was delimited with grids generated using detailed geologic information provided by the Company.

**Investors are cautioned that the resource estimate is preliminary in nature and does mean or imply that an economic borate deposit exists at the El Cajon deposit. Further testing will need to be undertaken to confirm economic feasibility of the El Cajon deposit.**

The Cajon target is composed of three mineralized beds, hosted in mid-Tertiary clastic sediments. The lower unit (locally denominated Unit C) is overlain by a basalt flow, which has been used as marker bed and is locally known as El Cajon Basalt. This mineralized zone crops out, but it is fully replaced by amorphous carbonate (CRO). The other two zones, locally named as Units A (top) and B (middle) overlay the Cajon basalt.

Units B and C were defined and described in detail during the surface mapping and/or core logging by the company's geologic team while unit A was defined using archived information (historical drilling) and the interpretation and continuity was based on generalized lithological descriptions and assay results available in the company's files.

Based on that information, two resource estimations were performed using 5 and 8% B<sub>2</sub>O<sub>3</sub> cut-offs (the latter has a minimum thickness of 3 meters). The estimated resources in this area are summarized and categorized in the following table:

**Table8.Resource EstimateSummary**

Unit	Resource Class*	Cut off 5% B <sub>2</sub> O <sub>3</sub>		Cut off 8% B <sub>2</sub> O <sub>3</sub> (>3 m)	
		Tonnage Mt	Grade % B <sub>2</sub> O <sub>3</sub>	Tonnage Mt	Grade % B <sub>2</sub> O <sub>3</sub>
A	Inferred	21.8	5.88	7.3	9.3
B	Indicated	16.5	6.4	5.3	9.3
C	Indicated	27.1	6.5	5.8	10.4

\* Based on CRIRSCO-style classification scheme

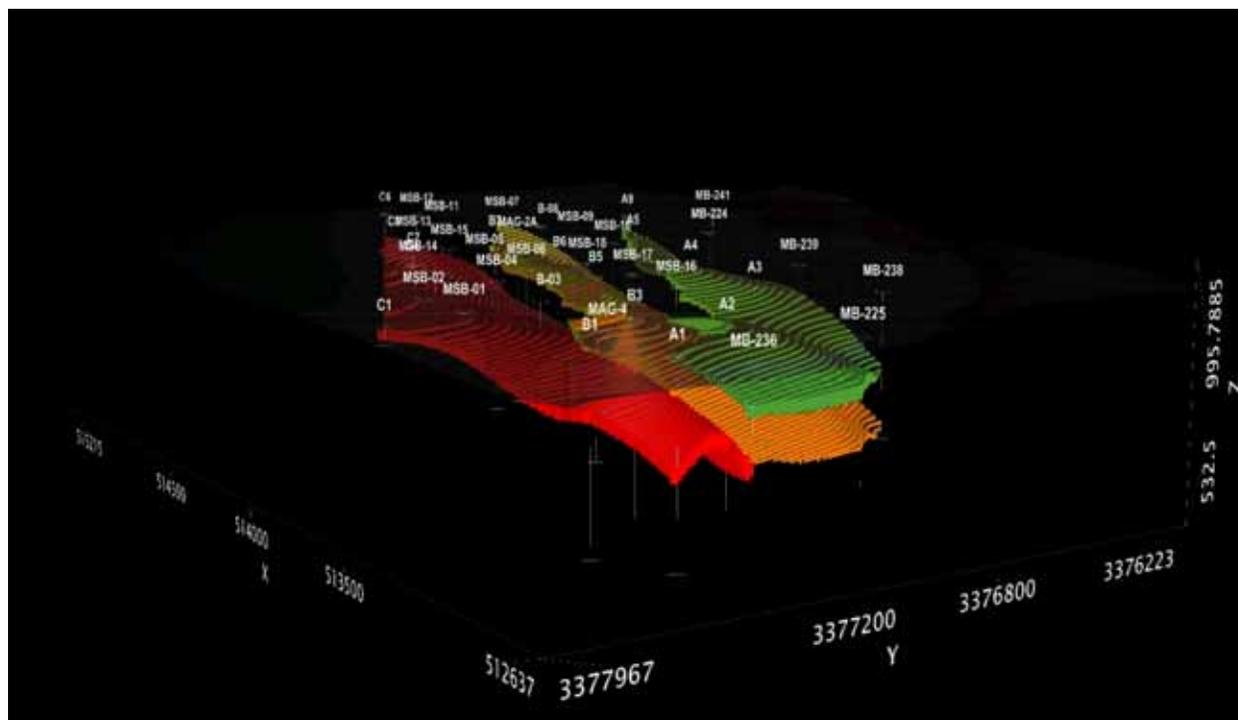
In addition, some drill holes contain higher grade borate than others, allowing for an estimate to be made for higher grade zones within the El Cajon deposit, these are listed in Table 9, below.

**Table 9. Grade and tonnage estimate for high-grade borate zones within the El Cajon Deposit**

Unit	Drill Holes	Tonnage Mt	Grade % B <sub>2</sub> O <sub>3</sub>
A	MB-224, MB-239, MB-241	3.7	11.5
B	MSB-16, MSB-17, MSB-10, MB-224	3.8	9.9
C	MSB-05, MSB-15 MAG-2A, MSB-11	3.6	11.7

According to CRIRSCO (Committee for Mineral Reserves International Reporting Standards) the resources estimated for unit A, can be classified as Inferred Resources. This classification is based on the concept that the available data (lithological and assays results) were obtained from archived information (historical) and cannot be currently replicated or properly validated, therefore there is not enough confidence for the standards.

The estimated resources for units B and C can be classified as Indicated, based on the spacing of the available data and the level of confidence on the geological continuity of the mineralization, the confidence on the sampling techniques and assaying procedures. QA/QC analysis of the assays results and mineral density estimations were performed in order to increase the confidence and help to support the above mentioned categorization.



**Figure 12. EL Cajon deposit isometric model**

## 17.1 Methodology

1. Prior to the modeling process, data was validated and gaps and overlaps were reported to Bacanora Minerals, corrected and included in a final dataset.
2. Drill hole data in an MS Excel format was converted to text files and imported into Target for ArcGis and MapInfo.
3. The collar elevations were obtained by single GPS unit and compared against elevation models extracted from a 30 m DEM. For most of the cases, the difference in elevation is less than 5m, data that provide some confidence to the coordinates provided by Bacanora Minerals.
4. Once the data was validated, a set of lithological/mineralized grids were generated using Target for ArcGis software. These grids were delimited by the geologic information provided by Bacanora.
5. A set of cross sections was generated, perpendicular to the general striking and several control points were extracted from the geologic maps in order to re-define the surface contacts. These cross sections were also used to project outcrops at surface.
6. A geometric method was used to define the extension of the influence area for each drillhole and a determined mineralized unit. The extend of the polygons were delimited by the available geologic information with a maximum setting of 250 metre buffer zone around the holes that intercept each mineralized unit.
7. Once the polygons were redefined, a total volume was defined using the previously estimated influence zones.
8. Because each unit is not homogeneously mineralized (each unit contain up to 3 rich-borates layers), the resource calculation was broken down into the sub-units defined by the sampling and assays and the logging when available. However, this calculation provides the overall estimates by units and not necessarily by individual layers.
9. Regarding to the amount of mineral per block, a density 2.2 tonnes/m<sup>3</sup> was used to estimate the tonnage. This parameter was obtained from various sources, although more recent density studies gave an averaged density of 2.41 tonnes/m<sup>3</sup>.
10. The grade applied to each polygon and its proportional mineralized volume was calculated using a 5% B<sub>2</sub>O<sub>3</sub> cut-off. A second estimation was completed applying a cut-off of 8%, for mineralized intervals above 3 meters thick. The thickness of the mineralization reported in the table corresponds to the sum of all the mineralized intervals/layers reported for each unit that satisfy the mentioned parameters.

**Table 10. Drill Hole Coordinates used in the resource estimate**

Hole_ID	Easting	Northing	Elev_m_GPS	Elev_m_DEM	Elev_Dif	Depth (m)
MSB-01	513589	3377602	893	898.852	5.852	44.2
MSB-02	513800	3377595	895	895.704	0.704	35.05
MSB-03	513595	3377395	896.5	900.035	3.535	105.46
MSB-04	513798	3377396	905	914.031	9.031	117.65
MSB-05	514201	3377201	902.5	900.743	1.757	138.68
MSB-06	513992	3377198	899.5	901.999	2.499	160.32
MSB-07	514791	3376806	897.5	900.02	2.52	62.79
MSB-08	514592	3376794	903	902.038	0.962	262.13
MSB-09	514398	3376799	906	903.265	2.735	129.84
MSB-10	514204	3376802	904.5	903.274	1.226	160.32
MSB-11	514808	3376996	904	900.031	3.969	114.6
MSB-12	514994	3376978	910	900.528	9.472	120.7
MSB-13	514591	3377204	892	899.93	7.93	71.93
MSB-14	514200	3377397	898.5	900.207	1.707	62.48
MSB-15	514397	3377197	904.5	900.207	4.293	91.59
MSB-16	513600	3377004	899	897	2	108.51
MSB-17	513795	3377003	897.5	898.5	1	99.36
MSB-18	514010	3377004	894	899.238	5.238	80.77
MB-224	514135	3376532	918.06	916.804	1.256	303
MB-225	512875	3377000	897.03	893.728	3.302	249
MB-236	512787	3377360	883.92	889.275	5.355	186.5
MB-238	513250	3376640	901.9	900.829	1.071	266.4
MB-239	513650	3376590	910.13	905.099	5.031	245.1
MB-241	514345	3376373	925.98	927.952	1.972	370.9
MAG-2A	514421	3376971	901.42	900.23	1.19	331
MAG-4	513230	3377439	886.4	893.429	7.029	304.8

## 17.2 Resources

### UNIT A

**Table 11. Unit A, borate resource at 5% B<sub>2</sub>O<sub>3</sub>cut-off**

Hole_ID	Volume_Influence m <sup>3</sup>	Min_Thickness m	Min_Thickness %	Min_Vol m <sup>3</sup>	Grade B <sub>2</sub> O <sub>3</sub> %	Tonnage
MB-224	5,083,030.00	28.35	42.26%	2,148,088	6.39	4,725,794.65
MB-225	2,659,158.00	10.67	43.77%	1,163,913	6.57	2,560,609.60
MB-236	751,701.00	3.05	13.34%	100,277	8.11	220,609.21
MB-238	1,094,884.00	2.44	100.00%	1,094,884	5.74	2,408,744.80
MB-239	4,246,753.00	24.99	100.00%	4,246,753	5.22	9,342,856.60
MB-241	2,113,808.00	19.50	54.68%	1,155,830	6.58	2,542,826.47
					Tonnage	21,801,441.34
					Ave.Grade	5.88

**Table 12. Unit A, borate resource at 8% B<sub>2</sub>O<sub>3</sub>cut-off (minimum thickness of 3 m)**

Hole_ID	Volume_Influence m <sup>3</sup>	Min_Thickness m	Min_Thickness %	Min_Vol m <sup>3</sup>	Grade B <sub>2</sub> O <sub>3</sub> %	Tonnage
MB-224	5,083,030.00	10.67	14.09%	716,199	9.08	1,575,637.64
MB-225	2,659,158.00	4.57	18.74%	498,326	10.54	1,096,317.66
MB-236	751,701.00	3.05	13.34%	100,277	8.11	220,609.21
MB-239	4,246,753.00	9.14	36.57%	1,553,038	9.22	3,416,682.66
MB-241	2,113,808.00	7.92	22.21%	469,477	8.51	1,032,848.86
					Tonnage	7,342,096.03
					Ave.Grade	9.25

**UNIT B****Table 13. Unit B borate resource at 5% B<sub>2</sub>O<sub>3</sub>cut-off**

Hole_ID	Volume_Influence m <sup>3</sup>	Min_Thicknees m	Min_Thickness %	Min_Vol m <sup>3</sup>	Grade B <sub>2</sub> O <sub>3</sub> %	Tonnage
MB-236	190,777.00	1.83	100.00%	190,777	4.00	419,709.40
MB-225	702,765.00	4.58	100.00%	702,765	2.90	1,546,083.00
MB-238	862,995.00	1.52	100.00%	862,995	3.50	1,898,589.00
MSB-16	2,465,931.00	4.57	18.90%	466,061	8.07	1,025,334.11
MSB-17	1,349,381.00	3.04	15.00%	202,407	9.50	445,295.73
MSB-18	1,477,796.00	1.52	9.00%	133,002	3.90	292,603.61
MSB-08	7,441,539.00	2.43	5.00%	372,077	4.55	818,569.29
MSB-09	3,562,660.00	3.05	7.00%	249,386	7.09	548,649.64
MSB-10	2,237,610.00	3.05	12.00%	268,513	13.05	590,729.04
MB-241	3,794,395.00	3.05	11.00%	417,383	5.65	918,243.59
MB-224	3,691,000.00	13.72	45.00%	1,660,950	8.78	3,654,090.00
MB-239	1,996,805.00	7.62	100.00%	1,996,805	6.03	4,392,971.00
					Tonnage	16,550,867.41
					Ave.Grade	6.38%

**Table 14. Unit B borate resource at 8% B<sub>2</sub>O<sub>3</sub>cut-off (minimum thickness of 3 m)**

Hole_ID	Volume_Influence m <sup>3</sup>	Min_Thicknees m	Min_Thickness %	Min_Vol m <sup>3</sup>	Grade B <sub>2</sub> O <sub>3</sub> %	Tonnage
MSB-16	2,465,931.00	4.57	18.90%	466,061	8.07	1,025,334.11
MSB-17	1,349,381.00	3.04	14.76%	199,169	9.50	438,171.00
MSB-10	2,237,610.00	3.05	12.35%	276,345	13.05	607,958.64
MB-224	3,691,000.00	12.19	39.99%	1,476,031	8.98	3,247,267.98
					Tonnage	5,318,731.73
					Grade	9.3%

**UNIT C**

**Table 15. Unit C borate resource at 5% B<sub>2</sub>O<sub>3</sub> cut-off**

Hole No	Volume (m <sup>3</sup> )	Minimum Thickness (m)	Min_Thickness%	Min_Volm3	Grade B <sub>2</sub> O <sub>3</sub> %	Tonnage
MAG-04	4,018,010.00	11.35	50.31%	2,021,472	5.39	4,447,238.91
MSB-01	2,083,117.00	9.67	28.84%	600,768	7.20	1,321,688.97
MSB-02	839,033.00	13.82	100.00%	839,033	6.33	1,845,872.60
MSB-03	3,280,087.00	19.58	52.39%	1,718,601	5.56	3,780,921.26
MSB-04	2,237,595.00	10.24	26.74%	598,250	5.95	1,316,149.87
MSB-06	2,766,254.00	10.56	36.96%	1,022,459	5.13	2,249,408.92
MSB-05	3,223,304.00	21.93	52.54%	1,693,509	7.01	3,725,719.33
MSB-15	1,881,624.00	12.30	40.00%	752,650	7.90	1,655,829.12
MAG-2A	6,096,312.00	10.39	13.10%	798,546	9.92	1,756,801.56
MSB-08	5,445,262.00	9.16	27.16%	1,478,761	6.39	3,253,273.64
MSB-11	2,713,391.00	4.57	13.18%	357,664	7.91	786,859.91
MSB-12	1,304,659.00	3.35	33.30%	434,454	7.52	955,798.89
					Tonnage	27,095,562.98
					Grade	6.51%

**Table 16. Unit C borate resource at 8% B<sub>2</sub>O<sub>3</sub> cut-off (minimum thickness of 3 m)**

Hole_ID	Volume_Influence m3	Min_Thickness m	Min_Thickness %	Min_Volm 3	Grade B <sub>2</sub> O <sub>3</sub> %	Tonnage
MSB-01	2,083,117.00	3.30	9.89%	206,020	9.89	453,244.60

MSB-02	839,033.00	6.81	49.28%	413,475	9.14	909,646.02
MSB-04	2,237,595.00	3.05	8.29%	185,497	8.86	408,092.58
MSB-05	3,223,304.00	7.04	17.73%	571,492	10.47	1,257,281.96
MSB-15	1,881,624.00	6.25	20.23%	380,653	11.67	837,435.58
MAG-2A	6,096,312.00	8.56	10.79%	657,792	10.88	1,447,142.54
MSB-11	2,713,391.00	3.05	8.80%	238,778	10.81	525,312.50
					Tonnage	5,838,155.77
					Grade	10.4 %

## 18.0 Other Relevant Data And Information

There is no other relevant data or information concerning the El Cajon deposit.

## 19.0 Interpretation And Conclusions

Exploration by Bacanora Minerals Ltd on the El Cajon deposit has resulted in a preliminary resource estimate for the deposit.

A total of 18 diamond drill holes tested El Cajon in 2010. The results of these holes confirmed the interpretation that borate mineralization consisting of colemanite and howlite occurs in 3 separate horizons (Units A, B and C). The configuration of the deposit is that of a gently dipping southwesterly plunging synclinal structure, with minor anticlinal warps.

The data density while wide spaced is adequate for this stage of exploration. Based on the writer's examination of the data it is his opinion that it is reliable and meets or exceeds industry standards for such data.

The estimated resources for units B and C can be classified as Indicated, based on the spacing of the available data and the level of confidence on the geological continuity of the mineralization, the confidence on the sampling techniques and assaying procedures. Quality assurance and control analysis of the assays results and mineral density estimations were performed in order to increase the confidence and help to support the resource categories.

A preliminary resource of 11.1 million tonnes in the indicated category with an average grade of 9.9 %  $B_2O_3$ , using a cut-off of 8%  $B_2O_3$  and 3 metres as minimum thickness is estimated for El Cajon, with inferred resources in the order of 7.3 million tonnes grading 9.3%  $B_2O_3$ .

Based on the results of work conducted on the El Cajon deposit in the Magdalena project area, further work is warranted on the deposit in order to upgrade and expand the resource and to advance the project to a development stage.

In the writer's opinion, the work conducted by Bacanora Minerals Ltd on the El Cajon deposit met the original objective of estimating a preliminary borate resource.

## 20.0 Recommendations

1. A detailed geostatistical analysis is recommended to pre-define the drill hole spacing and the determination of proper infill drilling parameters.
2. More drilling on the main areas of interest is recommended in order to support/improve the geological interpretation and verify the continuity of the mineralized units. Future drilling campaigns must continue inserting blanks and standards in samples runs for QA/QC analysis. The use of a second high grade borate standard in sampling must be undertaken.
3. Specific gravity measurements of core sample must be continued in order to support tonnage estimates.
4. More detailed resource/reserve calculations can be performed based on the diverse mineralized layers identified on each unit. This will require a very detailed logging and the identification of different domains to correlate individual mineral layers between drill holes.
5. It is recommended to pair at least two holes that defined unit A in order to increase the reliability and confidence of historic information. Another drilling campaign is recommended in order to define the unit A.
6. Mineral characterization and preliminary metallurgical tests will provide adequate information for a better resource classification and its eventual upgrading from resources into reserves.
7. Obtain colemanite samples that can be supplied to local and foreign borate consumers to determine if the product is suitable for their requirements and what they are willing to pay for colemanite concentrates.

The estimated cost of the recommended program is in the order of \$US1,000,000.

A detailed breakdown of the recommended program costs are found in Table 17 below.

**Table 17. Estimated Cost of Recommended Exploration Program**

<b>Expense Category</b>	<b>Days</b>	<b>/units</b>	<b>Budgeted Cost</b>
<b>WAGES &amp; SALARIES</b>			
Consultant	90	days	\$45,000.00
Project Manager	90	days	\$27,000.00
Field technicians	90	days	\$7,600.00
Local labor	90	days	\$5,400.00
<b>FIELD EXPENSE:</b>			
Field supplies	90	days	\$9,000.00
Freight			\$5,000.00
Fuel			\$3,000.00
Food	90	days	\$2,000.00
Hotel	90	days	\$15,000.00
Telephone			\$1,000.00
Truck maintenance			\$1,500.00
Travel			\$3,000.00
<b>REPORT PREPARATION</b>			\$10,000.00
<b>TECHNICAL SERVICES/ SUBCONTRACTORS</b>			
Assay & analysis, incl standards			\$30,000.00
<b>Diamond Drilling</b>			
Mob/demob			\$10,000.00
Moves			\$5,000.00
3000 meters of NQ			\$500,000.00
Metallurgical testing			\$200,000.00
<b>SUBTOTAL</b>			\$869,000.00
Contingency			\$75,000.00
<b>TOTAL</b>			<b>\$960,000.00</b>

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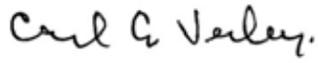
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## 22.0 Date And Signature Page

### 22.1 Signatures



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Carl G. Verley, P.Geo.



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Martin F. Vidal, Lic. Geo.



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Rodrigo Calles Montijo, Lic. Eng.

### 22.2 Date

Dated Effective: June6, 2011.

